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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,311	04/19/2004	Thorsten Stabel	033851-008	1320
21839	7590	03/08/2006	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			ADDISU, SARA	
			ART UNIT	PAPER NUMBER
			3722	

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/826,311	Applicant(s) STABEL ET AL.	
	Examiner Sara Addisu	Art Unit 3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/20/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the amendment filed 11/29/05. Currently, claims 1-22 are pending in this application.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "bore passing through the body of the insert from one lateral surface to another" (as claimed in Claim 20, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

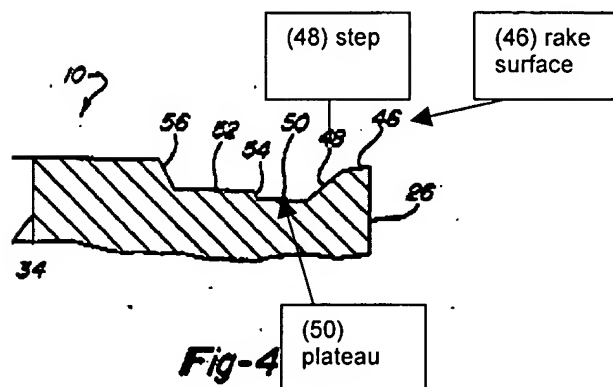
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 11-16, 18, 19, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Katbi et al. (U.S. Patent No. 5,230,591).

Katbi et al. teaches a cutting insert having a multi-cornered base body (square when viewed in top view, fig 2) including top and bottom surfaces (12 & 14), side flanks (26, 28, 30 & 32) interconnected by corner surfaces, cutting surface (36) on top and/or bottom surface, peripheral cutting edge (38) formed at the intersection of side flanks and top and bottom surfaces (12 & 14) (see figure 1 and Col. 2, lines 40-45). Katbi et al. also teaches the cutting surface having a central bore (34), a plateau (50 with raised support pads 52) located on the top and bottom surfaces surrounded by a peripheral positive rake surface (46) that is situated between the plateau surface and the cutting

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edge (38) (see diagram below). Furthermore, Katbi et al. teaches an upwardly extending variable peripheral step (48) interconnecting the plateau (50) and the rake surface (46) (with the corner step portions extending uninterruptedly along the respective corner rake surface portions) (see figure 2, which also shows that step (48) is linear when viewed perpendicular to the cutting surface). Additionally, Katbi et al. teaches side flanks forming obtuse corners (see figure 2). Katbi et al. also teaches in figure 3, lateral cutting edge (38) having a sagging middle portion therefore the step is of varying height having a maximum height is disposed at the corner step portions and a minimum height midway between the adjacent corners (refer to the explanation and figure below regarding the varying height of the step: see argument under Response to Arguments). Regarding claim 19, Katbi et al. teaches variable width land surface (rake) which is changes width at (44) leading to a wavy step portion around the corners (see figure 2 and Col. 2, lines 49-54).



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katbi et al. (U.S. Patent No. 5,230,591), in view of Okada et al. (U.S. Patent No. 6,234,726).

Katbi et al. teaches a cutting insert having a multi-cornered base body as set forth in the above rejection.

However, Katbi et al. fails to teach the insert having a wedge angle less than 90 degrees to define a lateral clearance surface.

Okada et al. teaches an indexable insert having flank faces (23) inclined inwardly as they approach a lower surface of the tip body (i.e. have a wedge angle less than 90 degrees), defining a clearance angle/surface with respect to the edges (24) (see figure 2 and Col. 10, lines 34-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incline inwardly the peripheral surfaces of Katbi et

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al.'s insert towards the lower surface as taught by Okada et al. for the purpose of obtaining clearance in relation to work piece.

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katbi et al. (U.S. Patent No. 5,230,591), in view of Hessman et al. (USP 5,032,049).

Katbi et al. teaches a cutting insert as set forth in the above rejection.

However, Katbi et al. fails to teach the minimum height of the step being situated closer to one of the corners.

Hessman et al. teaches a cutting insert having side surfaces (13A-13D).

Hessman et al. also teaches in figure 2a, side surfaces 13B and 13D having cutting edges that form two arched portions such that step (16A) located at the lowest point of the arch is closer to one of the corners of the cutting insert ('049, Figures 2a).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Katbi et al.'s invention such that it's cutting edge has two arched portions, as taught by Hessman et al. for the purpose of achieving carefully defined line-shaped support surfaces abutting the site of the milling body ('049, Col. 3, lines 29-32).

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katbi et al. (U.S. Patent No. 5,230,591).

Katbi et al. teaches a cutting insert as set forth in the above rejection. Katbi et al. fails to teach a bore passing through the base body from one lateral face to another lateral face. However, it is well known in the art that when there is a milling tool having a tool body on which a plurality of cutting inserts are supported, the cutting inserts could be mounted preferably as lateral insert or tangential inserts, that is, their securing bore is oriented either approximately in the axial direction (lateral insert) or in the radial direction (tangential insert) thus have a bore passing through the base body from one lateral face to another lateral face.

Response to Arguments

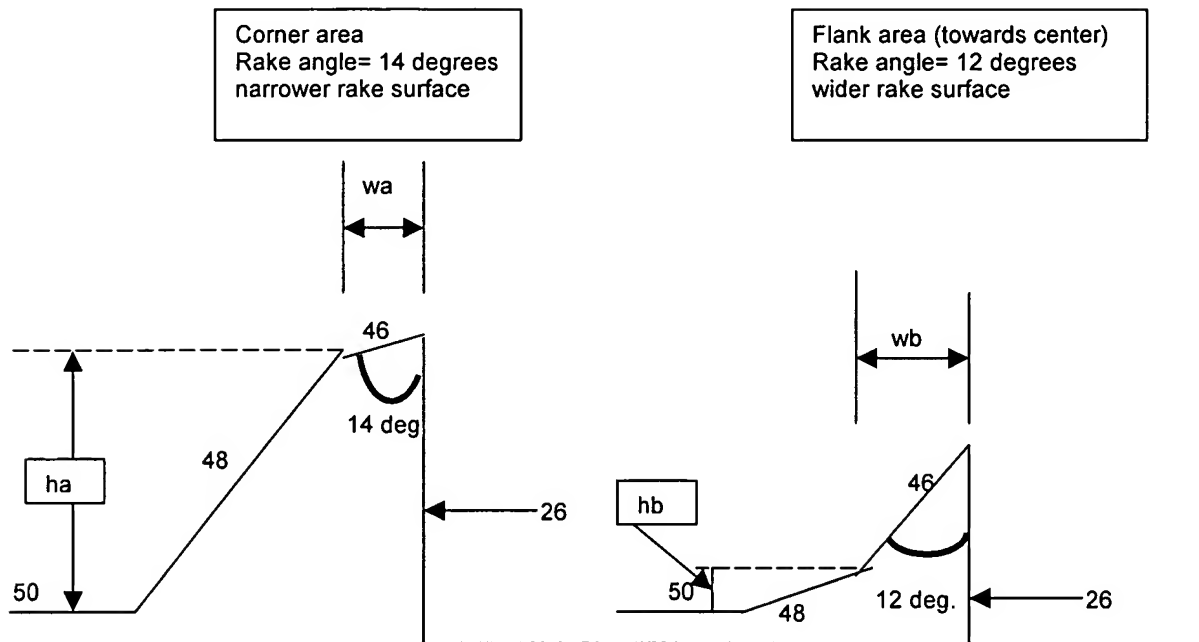
6. Applicant's arguments filed 11/29/05 regarding claims 1-16, 18, 19, 21 and 22 have been fully considered but they are not persuasive. See explanation below.
7. Applicant's arguments filed 11/29/05 regarding claims 17 and 20 have been fully considered and are persuasive (i.e. art used Satran et al. (US Pub. No. 2004/0202515 since the date does not meet the priority date of

the instant application. However, upon further review, claims 17 and 20 are rejected with newly found prior art.

8. In response to Applicant's argument regarding claim 1 (page 8, lines 6-11) that *"As described at col. 2, lines 45-47, the cutting edge 38 is in the shape of a descending arc 40 from corner to each adjacent corner of the insert. However, irrespective of the arc shape of the cutting edge, as clearly illustrated in Fig. 1, the height of the step 48 is uniform all along the circumference of the cutting insert. There is no variation at all. The height of the step is the same at the corner of the cutting insert as well as at the middle between two corners"*, Examiner respectfully disagrees. Examiner points out that Katbi et al. teaches the cutting edge (38: which is arched) has a descending rake (46) located rearward from the cutting edge and the descending rake face is followed by a descending step (48) ('591, figure 4 and Col. 2, lines 45-58 and 66-68). If the height of the step was constant then the step would no longer be descending towards the center of the insert but rather ascending since the rake surface just forward of it has a variable descending angle. See figure below for further explanation (the angles are exaggerated). Katbi et al. teaches the rake face (46) having descending angle 14 degrees and narrower width (wa) at the corner and 12 degrees and a wider width (wb) towards the flank ('591,

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Col. 2, lines 58-60 and 51-53). As shown below, the left figure indicates corner portion where the cutting edge is at it's highest height (because it's arched at the center), however the rake face has a wider descending angle and a narrower width (w_a) which leads to the following portion (i.e. descending step, 48) to start descending from a higher location to plateau 50. On the other hand, the right hand figure represents the flank area such as the center where the cutting edge is at its lowest height (because it's arched at the center), however the rake face has a smaller descending angle and a wider width (w_b) which leads to the following portion (i.e. descending step, 48) to start descending from a lower location to plateau 50, thus there is a height difference (h_a is higher than h_b) (i.e. the step has a varying height, wherein a maximum height is disposed at the corner step portions, as recited in claim 1).



Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/1/06



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